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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/492,761	01/27/00	CHIBA	T VX992060

EXAMINER	
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ART UNIT	PAPER NUMBER
2815	

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DATE MAILED: 09/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/492,761	CHIBA ET AL.	
	Examiner	Art Unit	
	Chris C. Chu	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1 - 5 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 - 5 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 27 January 2000 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

On page 22, line 10 of the specification refers a surface roughness "R" which is not referenced in the figures.

On page 32, line 19 and line 22 of the specification refer an interval "X" and a maximum length "Y" which are not referenced in the figures.

Correction is required.

2. Figure 6 and Figure 7 are should be designated by a legend such as --Prior Art-- because both figures are disclosed in JP11156563 as Fig. 1 and Fig. 2. See MPEP § 608.02(g).

3. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect can be deferred until the application is allowed by the examiner.

Specification

4. The disclosure is objected to because of the following informalities: on page 23, line 24 of the specification refers "R0.9 mm" which should be --0.9 mm --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1 ~ 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the term "very small" is a relative term which renders the claim indefinite. The term "very small" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Iwai.

Note Fig. 7 of Iwai, where the reference shows a semiconductor wafer with very small dot marks (111b) on an inner wall face of a notch (the place of 111b) formed on an outer peripheral face thereof (see Fig. 7). Regarding the recitation "wherein the dot marks are formed by irradiating a laser beam having a diameter of 1 to 13 μm," note that a "product by process" claim is directed to the product per se, no matter how actually made. See ***In re Thorpe et al.***, 227 USPQ 964 (CAFC, 1985) and the related case law cited therein which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that the applicant have burden of proof in such cases as the above case law makes clear.

9. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Jeng et al.

Note Fig. 4B of Jeng et al., where the reference shows a semiconductor wafer with very small dot marks (22) on an inner wall face of a notch (18) formed on an outer peripheral face thereof (see Fig. 4B). Regarding the recitation "wherein the dot marks are formed by irradiating a laser beam having a diameter of 1 to 13 μm," note that a "product by process" claim is directed to the product per se, no matter how actually made. See ***In re Thorpe et al.***, 227 USPQ 964 (CAFC, 1985) and the related case law cited therein which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that the applicant have burden of proof in such cases as the above case law makes clear.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al.

Yano et al. discloses a semiconductor wafer with a notch formed on an outer peripheral face thereof (32 in Fig. 5) except very small dot marks on an inner wall face of a notch. However, such a difference is regard as nothing more than obvious designs variation of Yano et al., because Yano et al. discloses the marks on the side surface portion (18 in Fig. 5) of the side surface of the semiconductor wafer. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to place the very small dot marks on an inner wall face of a notch, since the notch is a portion of the side surface of the semiconductor wafer. The ordinary artisan would have been motivated to modify Yano et al. in the manner described above for at least the purpose of preserving the marks. Again, the recitation "wherein the dot marks are formed by irradiating a laser beam having a diameter of 1 to 13 μm," is a "product by process" claim, which is directed to the product per se, no matter how actually made. See ***In re Thorpe et al.***, 227 USPQ 964 (CAFC, 1985) and the related case law cited therein which make it clear that it is the final product per se which must be determined in a

"product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that the applicant have burden of proof in such cases as the above case law makes clear.

12. Claims 2 ~ 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al. as applied to claim 1 above, and further in view of Oishi et al.

Yano et al., as modified, discloses the claimed invention except for upper and lower edge line portions of the inner wall face of the notch are respectively chamfered to thereby constitute inclined faces. However, Oishi et al. shows that an inclined faces (see Fig. 1b). Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to further modify Yoshida by including inclined faces as taught by Oishi et al. The ordinary artisan would have been motivated to further modify Yoshida in the manner described above for at least the purpose of reducing residual work stress or thermal stress on a wafer (column 1, lines 45 ~ 48).

Regarding claim 3, since Yano et al., as modified, does not limit the angle of an inclination of the inclined face to any particular or specific degree, the reference discloses encompasses all well known an angle of an inclination of the inclined face relative to the surface of the semiconductor wafer including "equal to or smaller than 30 degree" (see Fig. 1b of Oishi et al.).

Regarding claim 4, Yano et al., as modified, discloses a surface roughness of the inclined face is equal to or smaller than 1 μm (column 2, lines 9 ~ 14).

Regarding claim 5, Yano et al., as modified, discloses the dot marks are formed at least either of the upper and lower inclined faces (see Fig. 1b of Oishi et al. and Fig. 2 of Yano et al.).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kimura et al. and Yajima et al. disclose a code and notch on a wafer. Additionally, note that Poon et al. discloses the claimed manner in which the marks are formed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is (703) 305-6194. The examiner can normally be reached on M-F (10:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Chris C. Chu
Examiner
Art Unit 2815

c.c.
September 7, 2001

EDDIE LEE
SUPERVISORY PATENT EXAMINER
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